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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/524,942	03/14/2000	David J. McDonnell	042390.P6357C	8992

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ELMORE, REBA I

ART UNIT	PAPER NUMBER
2187	8

DATE MAILED: 03/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/524,942	MCDONNELL ET AL.
	Examiner	Art Unit
	Reba I. Elmore	2187

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 10 March 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 13-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 13-44 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

1. Claims 13-44 are presented for examination.

Specification

2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

35 USC 102

3. The rejection of claims 13-24 and 28-44 as being anticipated by Martin et al. is ***Maintained*** from the previous office action and repeated below.
4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. Claims 13-24 and 28-44 rejected under 35 U.S.C. 102(e) as being anticipated by Martin et al.

Martin teaches the present invention (claims 13, 23 and 37) as claimed including an apparatus and method, the apparatus and method comprising:

a host side memory controller region having a memory access request input and a memory command packet chunk output, a memory command packet chunk being a portion of a memory command packet, the host side memory controller region clocked by a first clock (e.g., see Figure 2);

a memory side memory controller region having a memory command packet chunk input coupled to the memory command packet chunk output, the memory side memory controller region clocked by a second clock (e.g., see Figure 2);
the second clock different than the first clock (e.g., see Figure 2); and,
a memory coupled to the memory side region (e.g., see Figure 2).

As to claim 14, Martin teaches the memory command packet chunk output further comprises a row output and a column output (e.g., see col. 5, line 55 to col. 6, line 27).

As to claims 15 and 29, Martin teaches the host side memory controller region further comprises a scheduler coupled to the memory access request input, the scheduler configured to generate the memory command packet (e.g., see col. 5, line 55 to col. 6, line 27).

As to claims 16 and 30, Martin teaches the scheduler is coupled to a queue (e.g., see col. 5, line 55 to col. 6, line 27).

As to claims 17, 31 and 39-41, Martin teaches the memory command packet is a row command to activate a memory row by pre-charging the memory row (e.g., see col. 7, lines 18-31).

As to claims 18, 32 and 42-44, Martin teaches the memory command packet is a column command to read or write to/from the memory device (e.g., see col. 7, lines 18-31).

As to claims 19 and 33, Martin teaches the scheduler further comprises logic to determine when resource conflicts (e.g., see col. 5, line 55 to col. 6, line 27).

As to claims 20 and 34, Martin teaches the host side memory controller region further comprises a second memory command packet chunk output (e.g., see col. 5, line 55 to col. 6, line 27).

As to claims 21 and 35, Martin teaches the second clock is faster than the first clock (e.g., see Figure 2).

As to claims 22 and 36, Martin teaches the host side memory controller region is configured to present a second memory command packet chunk upon the second memory command packet chunk output, the second memory command packet chunk a portion of a second memory command packet (e.g., see col. 5, line 55 to col. 6, line 27).

As to claim 24, Martin teaches an external agent configured to read and write to the memory via the memory controller (e.g., see col. 5, line 55 to col. 6, line 27).

As to claim 28, Martin teaches the memory command packet chunk output further comprises a row output and a column output (e.g., see Figure 2).

35 USC 103

6. The rejection of claims 25-27 as being unpatentable over Martin et al. is *maintained* from the previous office action and repeated below.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al.

Martin teaches the independent and intervening claims as given above. Martin does not specifically teach an external agent connected to the memory subsystem having a processor, graphics subsystem and/or an expansion bus master, however, these types of components are common well known elements to be connected to a memory subsystem and official notice is

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taken thereof. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an external agent having a processor, a graphics subsystem and/or an expansion bus master because these components connected to a memory subsystem provide a wide variety of available usability and lets a user perform even more tasks. An external agent which would be connected to the memory subsystem would normally have a processor and a graphics subsystem to provide flexibility which is desirable for a multitude of computer driven activities. An expansion bus provides additional I/O support which is also desirable in computer systems.

Response to Applicant's Remarks

9. Applicant's arguments filed March 10, 2003 have been fully considered but they are not persuasive.

10. As to the arguments that the reference does not teach a chunk of a command packet being passed from a region that is clocked by a first clock to a region that is clocked by a second clock, this limitation is taught by Martin to the extent required by the actual claim language. The processor or host side of the system is capable of an operating frequency that is faster than the memory side of the system. Figure 2 shows not only packets coming from the command bus but using DRAM which requires clock divides and delays since the memory is much slower than the host. Additionally, a 'chunk' of a command packet is not limiting. It is the same as a subset of a packet of the whole command packet but a subset of the packet of the whole command packet includes the whole command packet. This is basic mathematical principle. More description is required in the claim itself for the 'chunk' of a command packet to be further considered.

Action is made Final

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reba I. Elmore, whose telephone number is (703) 305-9706. The examiner can normally be reached on M-TH from 7:30am to 6:00pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the art unit supervisor for AU 2187, Do N. Yoo, can be reached for general questions concerning this application at (703) 308-4908. Additionally, the official fax phone number for the art unit is (703) 746-7239. The after-final fax phone number for the art unit is (703) 746-7238. The fax phone number for drafts or non-official communications is (703) 746-7240.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center receptionist whose telephone number is (703) 305-3800/4700.



Reba I. Elmore
Primary Patent Examiner
Art Unit 2187

March 15, 2003